

MR2707-3

Serial Number: 09/990,273

Reply to Office Action dated 10 January 2005

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listing of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently amended) An ultrasonic and infrared transmitter with tunable carrier frequency comprising:

a frequency divider for receiving an oscillation frequency and dividing said frequency to produce a carrier signal at an output thereof;

a multiplexer having a first input for receiving a data signal and a second input coupled to said output of said frequency divider for receiving said carrier signal, said multiplexer having an output and a control input for receiving from said frequency divider and a data signal and controlling outputs by use of a select control signal to select between said data signal being output to said output of said multiplexer and said carrier signal modulated by said data signal being output to said output of said multiplexer;

an output buffer connected to said output of said multiplexer for outputting ~~said carrier~~ a respective signal input thereto; and

MR2707-3

Serial Number: 09/990,273

Reply to Office Action dated 10 January 2005.

an infrared light emitting diode or an ultrasonic transducer connected to said output buffer for transmitting an infrared or ultrasonic modulated carrier signal.

Claims 2 - 6 (Cancelled).

Claim 7 (Currently amended) An integrated circuit ultrasonic and infrared transmitter with tunable carrier frequency comprising:

a frequency divider for receiving an oscillation frequency and dividing said frequency to produce a carrier signal at an output thereof;

a pair of multiplexers, a first of said multiplexers having a first output, a first input for receiving a first data signal, a second input coupled to said output of said frequency divider for receiving said carrier signal from said frequency divider and a data signal and controlling outputs by use of and a first control input for receiving a first select control signal, a second of said multiplexers having a second output, a third input for receiving a second data signal, a fourth input coupled to said output of said frequency divider through an inverter for receiving an inverse of said carrier signal and a second control input for receiving a second select control signal, said first multiplexer outputting one of said first data signal and said carrier

MR2707-3

Serial Number: 09/990,273

Reply to Office Action dated 10 January 2005

signal modulated by said first data signal to said first output
responsive to said first select control signal, said second
multiplexer outputting one of said second data signal and said
inverse carrier signal modulated by said second data signal to said
second output responsive to said second select control signal; and
a pair of an output buffers having inputs respectively connected to said first
and second outputs of said pair of multiplexers for providing a
push-pull output between respective outputs of said output buffers;
and, for outputting said carrier signal.
a transmitting element coupled between said outputs of said output buffers.

Claims 8 - 11 (Cancelled).

Claim 12 (Currently amended) An integrated circuit ultrasonic and infrared transmitter according to claim [[11]] 7, wherein said ~~two output ports form a push-pull architecture to drive~~ transmitting element is one of an ultrasonic transducer or an infrared light emitting diode.